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*Oresme on Motion (Questiones super Physicam, III, 2-7)**

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1. Preliminary remarks

In their chapter on motion published in *Science in the Middle Ages*, John E. Murdoch and Edith D. Sylla mitigate some of A. Maier's statements on the disagreements between Ockham and Buridan concerning motion.[1] Maier was actually inclined categorically to contrast[2] Ockham's and Buridan's views of motion; in fact, she does not mention their common effort in contending against a general theory of motion that relied upon the necessity of postulating a *res superaddita* in addition to the things suffering alteration and augmentation/diminution (*alteratio, augmentatio, diminutio*). On the contrary, she emphasizes the difference between Ockham and Buridan on the subject of local motion, which for the latter is not to be identified either with the *mobile* or with the space, but with a *fluxus*, which he considers a *conditio* or an accidental form inhering in the *mobile*.[3] Buridan puts forward his pro-

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[1] J. E. Murdoch, E. D. Sylla, *The Science of Motion*, in: D. C. Lindberg (ed.), *Science in the Middle Ages*, Chicago and London 1978, 217 (The Chicago History of Science and Medicine)

[2] A. Maier, *Zwischen Philosophie und Mechanik. Studien zur Naturphilosophie der Spätscholastik*, Roma 1958, 53, 117 (Storia e letteratura. Raccolta di studi e testi, 69). The opposition between Ockham and Buridan lies in the different role assigned by Maier to them in the development of scientific thought: the former is in fact viewed as the supporter of a position more distant from the modern than those of his predecessors (see pp. 41-2, 100 and for a more correct appraisal J. E. Murdoch, E. D. Sylla, *The Science of Motion*, 216-7), the latter prepares the way, according to Maier, to the modern law of inertia (A. Maier, *Zwischen*, 132-3, 151). On A. Maier see A. Maierù, *Anneliese Maier e la filosofia della natura tardoscolastica*, in: R. Imbach, A. Maierù (eds.), *Gli studi di filosofia medievale tra Otto e Novecento. Contributo a un bilancio storiografico*. Atti del convegno internazionale. Roma, 21-23 settembre 1989, Roma 1991, 303-30 (Storia e letteratura. Raccolta di studi e testi, 179).

[3] "Nos autem dicimus primo quod omnis motus est subiective in mobili, scilicet in eo quod movetur, per realem inherentiam sicut albedo esset in pariete", Johannes

posal of considering local motion a *conditio* or a *fluxus* inhering in the *mobile* (being an adherent in this way to what I shall call a *res*-theory) after introducing the casus of the rectilinear motion of the universe. Some years later, Albert of Saxony in his commentary on the *Physics* dealt with local motion where he neatly distinguished between a philosophical and a theological approach: in the former there is no need to have recourse to something in addition to the *mobile*, in the latter motion is identified with a *fluxus* inhering to the *mobile*.[4]

Oresme's discussion of motion in the first seven questions of his commentary on the *Physics* — which Maier thought was lost when she wrote *Zwischen Philosophie und Mechanik* — presents some original and interesting elements in comparison either with Buridan or Albert of Saxony. Oresme's philosophical attitude — which I shall sometimes call "nominalist" without charging the word with any specific meaning and only in order to stress its opposition to a *res*-theory[5] — is at one with both Buridan or Albert as far as their efforts to reject a *res superaddita* in their explanations of alteration and augmentation/diminution; he is nevertheless decidedly more determined than both Buridan and Albert to refute a *res*-theory for local motion.

The first seven *Questiones* of Book III of Oresme's commentary on the *Physics* are very important in order to sketch a more complete picture of the medieval dispute about different views with respect to motion. I will limit myself to mention the following, concerning exclusively local motion: 1) the *fluxus* turns out to assume, if interpreted in a Buridanian way (which Oresme does not consider correct), a definitely "realistic" feature;[6] 2) Oresme's new rendering of *fluxus*

Buridanus, *Questiones super octo libros Physicorum*, Paris 1509, III, 12, f. 54vb (repr. Frankfurt a. M. 1964); see A. Maier, *Zwischen*, 129.

[4] Even in the titles of his *quaestiones* Albert of Saxony distinguishes these two different spheres: "utrum secundum Aristotelem et eius Commentatorem ad hoc quod aliquid moveatur localiter requiratur aliqua res que sit quidam fluxus distinctus a mobili et loco" and "utrum admittentes casus divinos oporteat concedere quod motus localis sit alia res a mobili et loco", Albertus de Saxonia, *Questiones super octo libros Physicorum*, Venetiis 1504, III, 6 and 7, ff. 36rb-37va.

[5] In particular, I use the term "nominalist" to refer to Ockham's attitude in refusing a *res*-theory for motion, that is, a *res superaddita* different from the *mobile* and inhering in it. On Ockham's discussion of motion see H. Shapiro, *Motion, Time and Place According to William Ockham*, St. Bonaventure N.Y.- Louvain-Paderborn 1957, 1-191 (Franciscan Institute Publication, Philosophy Series 16); M. McCord Adams, *William Ockham*, 2 vols., Notre Dame 1987, II, 799-827 (Publications in Medieval Studies. The Medieval Institute University of Notre Dame, 26).

[6] I use this term, like "nominalist" (see the previous footnote) without a specific philosophical import in order to describe an attitude favouring a *res*-theory. On the

allows an explanation of '*motus*' which does not require an inherent *res superaddita* (as Buridan does); Oresme is thus entitled to preserve a substantially "nominalistic" attitude as did Ockham; 3) this special solution is based on the equivalence between *fluxus* and *conditio seu modus ipsius mobilis*, which for Oresme is a *res pure successiva* formed by the different states of a moving thing and, in addition, allows him to maintain the clear-cut distinction between *mobile/res permanens* and *motus/res successiva*.

There are, however, further reasons to stress the importance of Oresme's commentary on the *Physics* within the context of the medieval dispute on motion, some of them urging us to reconsider some of Maier's conclusions on this issue. First and foremost, the relationship between Buridan and Oresme,[7] described by Maier as a complete dependence of the latter on the former, needs to be reassessed in view of the fact that Oresme, even though agreeing with Buridan in viewing motion as a *fluxus*, neatly departs from him in considering this *fluxus* a *modus* of the *mobile* and not an accidental form inhering in it. Moreover, Buridan is not the first and most convinced supporter of a definition of '*motus*' in terms of "*aliter se habere quam prius*" as Maier claimed; Oresme explicitly quotes Witelo's *Perspectiva* as the source of this definition.[8] Moreover, Oresme's influence on the

medieval debate on *forma fluens/fluxus forme* see Maier, *Zwischen*, 61-143 and D.C. Lindberg, *The Beginnings of Western Science. The European Scientific Tradition in Philosophical, Religious, and Institutional Context, 600 B.C. to A.D. 1450*, Chicago and London, 1992, 292-3.

[7] For a general overview on this topic see E. Grant, *Scientific Thought in Fourteenth-Century Paris: Jean Buridan and Nicole Oresme*, in: M. Pelner Cosman and B. Chandler (eds.), *Machaut's World: Science and Art in the Fourteenth Century*, New York 1978, 105-25 (Annals of the New York Academy of Sciences, 314); as far as the discussion on local motion in these *quaestiones* is concerned Oresme seems less committed than Buridan to theological arguments.

[8] I have already studied this aspect of Oresme's discussion in *La perception du mouvement selon Nicole Oresme (Questiones super Physicam, III, 1)*, forthcoming. See A. Maier, *Zwischen*, 126-7 for Buridan. The source explicitly quoted by Oresme is Witelo, *Perspectiva*, IV, *prop.* 110 (see *Opticae thesaurus Alhazeni Arabis libri septem... Item Witellonis Thuringopoloni libri decem*, Basel 1572, f. 167). The definition of motion as "*aliter se habere quam prius*" is mentioned also by Ockham, who thinks that it is quite identical with his own: "est autem ista descriptio [i.e. that proposed by Ockham] eadem realiter cum illa qua dicitur quod 'mutari est aliter se habere nunc quam prius': non enim aliter aliquid se habet nunc quam prius nisi quia habet formam vel locum quem prius non habuit vel caret forma vel loco quem prius habuit", Guillelmi de Ockham, *Brevis summa libri Physicorum. Summula philosophiae naturalis et Quaestiones in libros Physicorum Aristotelis*, ed. S. Brown, St. Bonaventure 1984, 254, 41-5 (Opera philosophica, 6).

younger colleagues at the University of Paris, which is not acknowledged by Maier, is attested by a quotation in Marsilius of Inghen's commentary on the *Physics*.[9]

In comparison with the commentaries by the most representative authors of the University of Paris (from John Buridan to Marsilius of Inghen), Oresme's[10] commentary presents a more systematic and complete discussion on motion: he scrutinizes and discusses five different opinions, proposes his own solution and tests its capability in explaining motion by confronting it with two definitions of motion which were among the most widespread and quoted in the medieval dispute on the topic (one from Aristotle and the other from Averroes).[11]

[9] A. Maier, *Zwischen*, 139-40; Maier uses only the *Abbreviationes* attributed to Marsilius, but she also mentions the *Questiones super Physicam*, published by L. Wadding among Scotus' works. See n. 37 of the present article for Marsilius' quotation.

[10] The discovery of Oresme's *Questiones super Physicam* was announced by Guy Beaujouan, who had found them in the ms. 7-6-30 (from which quotations are made) of the Biblioteca Colombina in Sevilla, in 1962 at the 10th International Congress of the History of Science, G. Beaujouan, *Manuscrits scientifiques médiévaux de la Bibliothèque Colombine de Seville*, in: *Acts du dixième Congrès International d'Histoire de Science (Ithaca 26 VIII - 2 IX 1962)*, Paris 1964, 633. M. Markowski (*Le "Questiones super 1-8 libros Physicorum Aristotelis" de Nicole Oresme retrouvées?*, in: Mediaevalia Philosophica Polonorum, 26 (1982), 19-24) ascribes to Oresme a commentary formerly attributed to Buridan, without considering however the manuscript of Sevilla; see the critical remarks of J. M. M. H. Thijssen, *The Short Redaction of John Buridan's Questions on the Physics and their Relation to the Questions on the Physics attributed to Marsilius of Inghen*, in: Archives d'Histoire Littéraire et Doctrinale du Moyen Age, 52 (1986), 238-9.

[11] I do not intend to deal with the chronology of this commentary (for which see M. Clagett, *Nicole Oresme and the Medieval Geometry of Qualities and Motions. A Treatise on the Uniformity and Difformity Known as "Tractatus de configurationibus qualitatum et motuum"*, Madison, Milwaukee, and London 1968, 646 (The University of Wisconsin Publications in Medieval Science, 11)); I only wish to point out how the theory of *reactio* in Book III, *q.* 8 is different from that of his *Questiones super de generatione* (see S. Caroti, *Da Buridano a Marsilio di Inghen: la tradizione parigina della discussione de reactione*, in: Medioevo, 15 (1989), 211): "Quarta conclusio est quod numquam movetur [scil. agens] a passo mediante virtute qua passum resistit et movetur. Probatur, quia quod movet est fortius ergo, si motus illius moveretur, debilius moveret fortius, quod est contra Aristotelem septimo huius. Sed contra hoc est Aristoteles in primo De generatione, quia omne agens naturale in agendo repatitur; secundo, patet experientia quod ferrum calidum calefacit aquam et frigescit ab ipsa. Ad primum dico quod causa quare agens repatitur a passo est quia in utroque sunt plures qualitates, ideo una est fortior in agente secundum quam agit in debiliorem in patiente, et e converso una est fortior in passo secundum quam fit reactio. Modo ille qualitates dicuntur agentia immediata, ideo sunt plures actiones et plura agentia. Ad secundum per idem dico quod caliditas ferri remittit frigiditatem aque et non e converso, sed humiditas aque remittit siccitatem ferri que est debilior, ex quo consequitur frigefactio vel remissio caliditatis. Et ex hoc sequitur: primo, quod si in ferro non esset nisi caliditas et in aqua frigiditas non fieret reactio", f. 35rb-va (the very few corrections to Oresme's

In this paper I shall deal with the five opinions presented and discussed by Oresme, together with his own solution; I shall omit a comparison between the position Oresme has taken in this commentary and the one defended in his other writings quoted by Maier.[12]

The five opinions considered *rationales* by Oresme are summarized in Book III, *q.* 2.[13] They pertain to the kind of being denoted by '*motus*' rather than its existence, which the natural philosopher must presuppose:

> omnis opinio rationalis potest reduci ad aliquam istarum: prima est quod motus non est aliquid vel aliqua, ideo dicunt quod nihil est. Secunda opinio est quod motus non est aliquid sed bene est aliqua, scilicet ita sic se habere ad motorem et mobile et acquisitum, ac si esset nomen correlativum. Tertia est quod motus est *mobile*. Quarta est quod motus est acquisitum per motum. Quinta est quod est quidam *fluxus* seu accidens distinctum a quolibet permanenti.[14]

Oresme deals with the first two opinions in Book III, *q.* 2, with the third in *q.* 3,[15] with the fourth in *q.* 4 and 5,[16] and with the fifth in *q.* 6;[17] he puts forward his own solution in *q.* 7,[18] testing it in the following *quaestio*[19] through a comparison with the two definitions by Aristotle and Averroes we mentioned above.

text in the quotations have not been noted; I am going to publish in the near future the critical edition of the eight questions on the III Book of the *Physics*). The conditions required for *reactio* here proposed are censured in the *Questiones super de generatione* and are identical to that of Richard Swineshead's *Calculationes*. It is in any case very difficult to assume only in this instance an influence of Swineshead when Oresme writes his commentary on the *Physics*, followed by a change when he comments the *De generatione*. The practice of medieval *magistri* of revising their commentaries prevents, moreover, one to state with sufficient certitude the chronological relations between their writings; see J. Hamesse, *"Reportatio" et transmission des textes*, in: M. Asztalos (ed.), *The Editing of Theological and Philosophical Texts from the Middle Ages*. Acts of the Conference arranged by the Department of Classical Languages, University of Stockholm, 29-31 August 1984, Stockholm 1986, 7-34 (Acta Universitatis Stockholmiensis, Studia Latina Stockholmiensia, 30).

[12] A. Maier, *Zwischen*, 133-8.

[13] "Utrum motus sit aliquid", ff. 31ra-31vb.

[14] F. 31rb.

[15] "Utrum motus sit res mota vel ipsum mobile", ff. 31vb-32va.

[16] "Utrum motus sit res acquisita mobili dum movetur" and "utrum motus localis sit illud quod acquiritur mobili tali motu, scilicet locus in quo et circa quod mobile movetur", III, 4, ff. 32va-33ra; III, 5, ff. 33ra-33vb.

[17] "Utrum motus sit res successiva sive fluxus distinctus a rebus permanentibus cuiusmodi sunt mobile et res acquisita ad quam est motus", ff. 33vb-34rb.

[18] "Utrum moveri sit aliter se habere continue quam prius", ff. 34rb-35ra.

[19] "Utrum motus bene diffiniatur quando dicitur quod est actus entis in potentia secundum quod in potentia", ff. 35ra-35va.

2. Opinio I: "motus est nihil"

The supporters of this opinion could be traced back to the Greek philosophers criticized by Aristotle in Book III of the *Physics*;[20] however, some typical arguments found in the sophismatic contexts concerning problems raised either by verbs of motion or more generally of change[21] or by the relations between *pars* and *totum*, do, nevertheless, mark an invitation to the examination of more recent debates.

This opinion is grounded on a special ontology according to which only *incomplexe significabilia*[22] are entitled to denote existent beings; on the other hand, the denotation of '*motus*', a *complexe significabile* having the same meaning of "*mobile moveri*", has no place either in the category of substance or in any other.[23]

[20] See e. g. S. Thomas Aquinas, *In octo libros Physicorum Aristotelis expositio*, ed. P. M. Maggiolo, Torino-Roma 1965, III, l. 3, 294, 149 and Walter Burley, *In Physicam Aristotelis Expositio et questiones*, Venetiis 1501, f. 66ra (repr., Hildesheim - New York 1972). Buridan discusses a very similar problem in his commentary on the *Physics*, III, 6: "utrum motus localis est vel utrum hec est vera: "motus localis est" ", v. Johannes Buridanus, *Questiones*, f. 48va. In Jean of Mirecourt's commentary to the *Sentences* an opinion is mentioned according to which "*actio nihil est nec motus, sed modi se habendi rerum*", which bears witness to the circulation of this position in the university milieu, see A. Maier, *Zwischen*, 333; see also F. Stegmüller, *Die zwei Apologien des Jean de Mirecourt*, in: Recherches de théologie ancienne et médiévale, 5 (1933), 67-8 no. 45. Oresme does not agree with the opinion according to which "*motus est nihil*", but he too consents, as we shall see, to the identification of '*motus*' with the *modus se habendi (mobilis)*.

[21] For example, Buridan's Sophismata "*Omne quod movetur movebatur prius*" and "*Nulla mutatio est instantanea*", v. Johannes Buridanus, *Sophismata*, ed. T. K. Scott, Stuttgart-Bad Cannstatt 1977, 120-2 (Grammatica speculativa 1).

[22] "Pro prima opinione est sciendum quod quedam sunt significabilia incomplexe sicut materia, compositum, forma substantialis aut accidentalis; et alia complexe sicut "hominem esse animal", "hominem currere" et sic de aliis. Secundo, notandum quod 'motus' non est significabile incomplexe proprie, quia 'motus' non est aliud quam "mobile moveri" et nihil est et ideo motus nihil est", f. 31rb. On *complexe significabile* see G. Nuchelmans, *Theories of the Proposition. Ancient and medieval conceptions of the bearers of truth and falsity*, Amsterdam-London 1973, 227-42 (North-Holland Linguistic Series, 8). In the first of the *notabilia* of Book III, *q.* 1 Oresme emphasizes the relationship between *cognitio intuitiva*, *nomina absoluta* and *incomplexe significabilia*: "notandum quod aliquid potest cognosci dupliciter: uno modo intuitive et incomplexe, alio modo complexe, et secundum hoc quedam nomina significant absolute et quedam comparative vel connotative, et aliquid dicitur cognosci quando multa complexa cognoscuntur quibus enuntiatur aliquid de alio", f. 30ra. I did not have K. Tachau's article on Oresme's theory of *complexe significabile* at my disposal; see P. J. Vàsquez Janiero, *Duns Scoto e altri maestri francescani all'8o Congresso internazionale di filosofia medievale (Helsinki, 1987)*, in: Antonianum, 63 (1988), 157, 159.

[23] It is the first *pro*-argument: "Probatur primo, quia "mobile moveri" non est substantia nec accidens, quia talis est significabile incomplexe; modo omne ens est substantia aut accidens", f. 31rb. In the last argument for the expression "mobile

Oresme appeals to Aristotle's authority (arg. 1), the *communis opinio* (arg. 2) and either the possibility for motion to be perceived (arg. 5) or, once its existence is denied, the impossibility to have adequate criteria for discriminating motion from rest (arg. 6). In the arguments against this first opinion Oresme points to some logical and semantic problems concerning propositions containing verbs of motion. In particular, in the third argument the existence of motion is granted on the basis of the term '*movere*' being a genus of special kinds of motion exemplified by *currere* or *alterare*;[24] in the fourth argument, the possibility of *complexe significabilia* to be predicated of other *complexe significabilia* is acknowledged;[25] in the seventh argument, sentences like "*aliquid movetur*" are considered meaningful because it is possible to locate in the world events such as those they describe.[26]

3. Opinio II: "motus est aliqua, scil. mobile et illa ad que se habet aliter quam prius"

This opinion, although dealt with more cursorily, deserves particular attention because Oresme will make use of it for his own solution proposed in Book III, *q.* 7.

In the conclusion (where this opinion is recorded in its complete

moveri" only a *suppositio materialis* is allowed, without a denotation in the world: "Quarto, illa: 'mobile moveri est aliquid', aut ergo subiectum supponit materialiter sicut pro illa propositione 'mobile movetur', et tunc bene est aliquid, sed non est ad propositum, quia est vera propositio vel oratio; aut supponit significative, et tunc oratio est incongrua et non intelligibilis, ut patet per grammaticam", f. 31rb. In the replies to these arguments the denotation of '*motus*' is fixed in the *forma fluens* or in the *mobile*: "Tunc ad rationes prime opinionis. Ad primam, potest dici quod 'mobile moveri' est accidens, quia aliqui dicunt quod est forma... et si non sit accidens tunc erit mobile vel aliquid tale, et sic erit substantia... Ad ultimam, quomodo supponit 'mobile moveri' potest dici quod supponit significative et est congrua, quia supponit pro aliqua re et tenetur neutraliter loco unius dictionis", f. 31va.

[24] "Tertio omne genus predicatur de sua specie affirmative, sed movere est genus ad currere et alterare et ita de aliis. Et ideo Aristoteles dicit illas species motus, ergo hec est vera: "aliquid currere est aliquod moveri". Et cum de quolibet predicamento dicatur 'esse' vel 'ens' vel 'aliquid', sequitur quod moveri est aliquid", f. 31rb.

[25] "Quarto, supposita divisione illius opinionis, sicut significabilia incomplexe predicantur de se invicem, dicendo "hoc est substantia", ita etiam erit de significabilibus complexe dicendo quod currere est moveri et esse album est esse coloratum", f. 31rb.

[26] "Iterum, saltem secundum omnes hec est concedenda: "aliquid movetur" vel "celum movetur", ergo ita est sicut ipsa significat, quia ab eo quod res est vel non est etc. Sed si est quod aliquid movetur, tunc falsum est dicere quod aliquid moveri nihil est", f. 31rb-va.

form[27]), it is pointed out that in order to fix the denotation of '*motus*', more things (*aliqua*) are required, that is the *mobile* and those things relative to which it assumes different positions (*illa ad que se habet aliter quam prius*). Even though Oresme does not state explicitly the distinction he makes later on (in Book III, *q.* 7) between internal (*intrinseca*) and external (*extrinseca*) reference marks, these things are external to the *mobile*, as clearly emerges from the two *pro-* and the second *con-*arguments.[28]

We shall see how, in his discussion of motion, Oresme is constantly preoccupied with avoiding the obstacle of postulating a special being in addition to the *mobile* or to the *res acquisita* or *deperdita* according to the different kinds of motions. In this *quaestio*, he emphasizes how the relationship between different things that is called forth by the expression "*aliter se habere quam prius*" is not a special being in addition to its components.

In the critical remarks against this opinion, Oresme quotes a theory of relations which prevents the fixing of the denotation of relative terms in more than a single thing,[29] and which relies on the synonymity between concrete and abstract terms and on a word's power not only of denoting but also of connoting. These are very important remarks for at least two reasons: a) the introduction of connotative terms;[30] b) the mention of relations could be a hint to the

[27] "Motus non est aliquid unum sed aliqua, scilicet mobile et illa ad que se habet aliter quam prius", f. 31va. Oresme probably makes reference to the definition from Witelo's *Perspectiva*, as can be suggested by his attribution of this definition to the Polish scholar in Book III, *q.* 1. Ockham considered this definition not to be different from his own, see n. 8. For Buridan see A. Maier, *Zwischen*, 124-7.

[28] "Probatur: quia aliter se habere a ad b non est aliud quam a et b sic se habentia, sicut dissimilitudo est dissimilia et inequalitas est inequalia... Secundo, patet quod motus non percipitur nisi percipiendo plura aliter se habere, ideo signum est quod motus est illa plura", f. 31va. In the first *probatio* a theory (already refuted by Aristotle) according to which motion is an *inequalitas* is mentioned (it is recorded also in Aquinas' and Burley's commentaries).

[29] "Sed pono conclusionem oppositam, scilicet quod motus non est talia sic se habentia. Probatur quia nomina relativa vel relationes, sicut paternitas, inequalitas etc., non supponunt nisi pro uno sed connotant aliud, sicut paternitas pro patre, cuius signum est quia omnes qui ponunt quod non sunt accidentia distincta dicunt quod concretum et abstractum sunt nomina sinonima sicut pater et paternitas, ergo, quamvis motus sit connotativum, tamen supponit pro uno et connotat aliud, sicut pro mobili connotando illa ad que aliter se habet", f. 31va. In the margin of the manuscript an anonymous note ascribes to Ockham the position according to which "concretum et abstractum sunt nomina sinonima".

[30] See n. 29. The importance of connotation is evident also as far as the denotation of the term '*inequalitas*' is concerned: "Ad primam dico quod illa inequalitas non est

identification of a possible source of Oresme's *modus seu conditio rei*, a very important element for his solution.[31]

3a. Res permanentes and res successivae

The *con*-arguments opening this question concern problems different from those discussed in the first two opinions, but of a considerable importance in the medieval debate on motion; in addition, Oresme's own solution calls for facing some of these problems. As far as the following discussion is concerned, the most interesting of these problems can be summarized in four points: a) ontological problems (and particularly mereological problems) rising from the necessity of assuming the existence of parts which are at once past and future in order to maintain the continuity of motion (arg. 1 and 2[32]); b) the difference between motion and beings which are *tota simul* and so can be totally grasped in an instant is so great that the very existence of motion itself is exposed to the risk of being denied;[33] c) the difference of limits (*incipit/desinit*) following from these different ontologies; d) as far as only local motion is concerned, the difficulty of locating the place of motion in view of its continuity.[34]

res realis, sed est realis connotando aliud, sicut exemplificatum est prius de paternitate", f. 31va.

[31] I should like to mention Henry of Ghent's theory of relations, opposing *res* and *modus rei*, see M. G. Henninger, *Relations. Medieval Theories 1250-1325*, Oxford 1989, 53. See also J. F. Wippel, *The Metaphysical Thought of Godefrey of Fontaines. A Study in Late Thirteenth-Century Philosophy*, Washington 1981, 232-6. It is not however possible to state precisely if Henry's or Godefrey's writings are the direct sources of Oresme. The same can be said for another possible source (John of Mirecourt) as well, mentioned in n. 20 and for Peter Olivi, who in some passages of his *Sentences* commentary quoted by A. Maier supports a theory of motion not far from Oresme's ("Die Bewegung ist eben kein reales Akzidens, sondern nur ein *modus essendi* (oder *modus se habendi*) des *mobile*"); see A. Maier, *Zwischen*, 314, 320, 329, n. 92 and namely 321 (for the quotation). It is worth pointing out that for Olivi the reference mark of the *modus se habendi* is external ("modus alius et alius se habendi ad aliquid extrinsecum"), a solution censured by Buridan and Oresme. As far as Roger Swineshead's outline of motion as *modus se habendi* is concerned see A. Maier, *Zwischen*, 133-4, n. 91.

[32] "Pars preterita motus non est nec pars futura ergo motus non est; consequentia tenet, quia totum non est aliud quam sue partes. Iterum, motus non est nisi medietas preterita et medietas futura, igitur si non sunt non est", f. 31ra.

[33] "Tertio, omne quod est est in hoc instanti, quia nihil est presens nisi instans, sed motus non est in instanti, quia non est nisi ante sit, sed non fit nisi in tempore igitur etc.", f. 31rb.

[34] "Quarto sic: si motus est tunc mobile movetur, verbi gratia motu locali; si sic, tunc queritur: aut movetur in loco in quo est, et hoc non, quia iam habet illud et per consequens non movetur ad illud, et etiam quia non est acquisitio partis post partem in loco in quo est; nec potest dici quod movetur in loco ubi non est", f. 31rb.

Replying to the first argument Oresme distinguishes permanent and successive beings — a very important distinction for his own solution in Book III, *q.* 7; he does not think, however, that this distinction is adequate to overcome the objection built into the relationship *totum/pars.*[35] Oresme's own solution — the *pars presens* consists of part of the past and part of the future — is close to Buridan's[36] and is recorded by Marsilius of Inghen in his commentary on the *Physics* as Oresme's position.[37] A solution to the same problem given later in Book III, *q.* 7[38] is probably more relevant: Oresme proposes to treat the problem of the relation between the whole and the parts for *res successivae* and *res permanentes* in two different ways: as far as the former are concerned, he considers this relation as being equivalent to that between points and a line or instants and a time interval.

The same distinction between *res successivae*, which are to be measured only in time, and *res permanentes*, which can be measured even in an instant, occurs in the reply to the third argument. Here Oresme — after pointing to some consequences following from the admission of "*in instanti est motus*"[39] — refuses general validity to the principle "*omne quod est, est in instanti*" and is, therefore, forced to limit the principle "*omne quod est in aliquo tempore est in quolibet illius temporis*"

[35] Once one denied the existence of one part of the whole (in this case motion), one is forced to deny the other part because of the *significatus copulatus*: "Sed contra: totum est due medietates; ergo, si prima non est, nec secunda, sequitur quod totum non est. Ad illud diceretur concedendo in sensu diviso quod prima medietas non est, nec etiam secunda, cum prima et secunda sunt de significato copulato, quia sunt ipse motus qui est", f. 31va.

[36] "Ideo aliter dico quod motus habet aliam partem quam medietatem preteritam et medietatem futuram, scilicet partem presentem, que componitur ex aliquo preterito et aliquo futuro; et ideo aliqua pars motus est sicut illa", f. 31va. Buridan as well discusses this topic in Book III, *q.* 6 of his commentary on the *Physics*, in so far as the peculiar ontology of motion is concerned: "secundo etiam ad hoc concludimus quod per presens oportet intelligere tempus divisibile cuius una pars est prius et alia pars posterius", see Johannes Buridanus, *Questiones*, f. 48vb.

[37] "Respondetur negando consequentiam, quia est aliquis motus qui nec est preteritus nec futurus sed compositus ex preterito et futuro, hic dicens Orem", Johannes Marsilius de Inghen, *Questiones subtilissime super octo libros Physicorum*, Lyon 1518, (repr. Frankfurt a. M. 1964) Book III, *q.* 2, f. 36vb.

[38] A different mereology for *res permanentes* and *successive* is required by the definition of *successivum simpliciter* in Book III, *q.* 7, see n. 69.

[39] "Ad tertiam dicunt aliqui quod motus non est in instanti, sed tamen in instanti est motus. Contra: in instanti est motus ergo dum instans est motus est; et sequitur ultra: ergo in instanti est tempus; et ultra: ergo subito est tempus; et iterum: ergo acquisitio partis post partem est in instanti sicut motus; ultra: ergo in hac mensura est motus, ergo mensuratur et continetur tali mensura, sicut in hoc loco est corpus ergo corpus continetur in hoc loco", f. 31va.

(*Phys.*, VI, 6, 236b 19-23).[40] Sentences such as "*motus est*" also require a certain amount of time for their verification.[41]

4. Opinio III: "motus est mobile seu res mota"

Even though the term '*mobile*' is not ambiguous, Oresme thinks it appropriate in the *notabilia* preceding the *pro*-arguments to state precisely that the *res mota* this opinion refers to is not to be regarded as something different from the *mobile*, like a sort of accident qualifying the substance as a moving one[42]. That a *res*-theory is the constant target of this opinion is unequivocally confirmed by the two last *pro*-arguments, and mostly by the fourth, in which such a special being (here called *fluxus*) postulated by a *res*-theory, is thought to involve a never-ending regress.[43]

[40] To be interpreted as referring exclusively to *res permanentes*: "et forte melius diceretur quod intelligit de rebus permanentibus, quia revolutio diurna est in una tota die et non in aliqua parte, quia successiva non sunt mensurabilia nisi tempore", f. 31vb.

[41] "Et tunc ultra quod continue hec est vera: 'motus est'; potest dici quod numquam est vera in instanti, sed per tempus, sicut non est ita in re sicut ipsa significat nisi per tempus", f. 31vb. Buridan deals with a similar problem in Book III, *q.* 6 of his commentary on the *Physics*; see Johannes Buridanus, *Questiones*, f. 49rb.

[42] "Secundo, sciendum quod potest intelligi quod motus est mobile uno modo, scilicet quod res moveatur motu distincto et superaddito, et ille motus sic movetur vel alio motu vel se ipso, et tunc esset alia res mota que non esset motus... et sic non intelligitur ista opinio prima. Alio modo intelligitur quod omne quod movetur movetur se ipso formaliter, ita quod non sit aliquod accidens vel fluxus inherens. Et sic intelligitur positio, et tunc res mota est motus et e converso", f. 31vb.

[43] "Ducendo ad impossibile, suppono primo cum adversario quod motus est talis fluxus distinctus. Secundo, quod non ponitur nisi quia est illud quo aliquid continue se habet aliter et aliter ad aliquod non motum; et ideo dicit Lincolniensis quod est exitus de potentia ad actum et dicitur quod est via, id est quo fit. Contra: sit a mobile et b sit ille fluxus; tunc sic: prius est verum quod b non est in a et postea quod b est in a, ergo a est mutatum ad ipsum b, ergo per suppositionem secundam hoc est per mutationem distinctam a subiecto et termino, quia propter aliud non ponitur, ergo motus erit motus, et sic proceditur in infinitum, quod est contra Aristotelem septimo huius. Et si dicatur quod se ipso mutatur ad b sine mutatione superaddita ergo etc., hoc est contra secundam suppositionem et pari ratione mutabitur a sine quocumque fluxu superaddito", f. 32ra. As far as the instantaneous change is concerned, the superfluity of a *res superaddita* is demanded by the principle of parsimony ("Frustra fit per plura ubi sufficiant pauciora", f. 32ra). Once admitted, untenable philosophical or theological consequences follow; in the former case the existence of a purely instantaneous res must be admitted ("Tertio, probatur de mutatione subita, quia si esset res superaddita, tunc duraret solum per instans, quod Aristoteles octavo huius reputat impossibile, quia simul inciperet et desineret esse", f. 32ra); in the latter God's creation of a single being produces a never ending chain reaction ("Item etiam Deus non posset creare unam rem solum quin causaret multas", f. 32ra).

As an anonymous copyist has recorded in the margins of the Seville manuscript, one of the most renowned supporters of this opinion is William Ockham, but already Averroes had maintained that this was Aristotle's own solution. Even if it can not be traced back exclusively to Ockham, it is highly probable that his position is envisaged in this opinion. This assumption is grounded not only on the assignment of '*motus*' to connotative terms, but also on the fact that the term '*motus*' is considered to have been coined for the sake of economy and elegance in speech in order to avoid dangerous misunderstandings.[44] Moreover, a large number of solutions to the *dubia* in this question indulge in a logical and semantic analysis of the different problems raised by this opinion.

From this third question to the seventh, the number of the arguments following the *titulum* is sharply reduced; they are replaced by a series of *dubia* within the questions immediately followed by their solutions. In the present question the capacity of this third opinion to solve some objections is revealed through some fourteen *dubia*; but above all it is shown how this opinion is not at variance with some of the definitions of motion by Aristotle, Averroes and, among the Latins, Robert Grosseteste — whose authority in this discussion is confirmed by the constant use of his solution throughout the different *opiniones*.

The definitions that are opposed, as *dubia*, to this third opinion are the following: a) "*motus est actus mobilis*" (in connection with which other *formulae* like "*corpus est motum*", "*motus est forma mobilis*", "*motus est accidens*", and "*motus est quantitas*" are discussed); b) "*motus est actus entis in potentia secundum quod huiusmodi*" (here we find in the following discussion Grosseteste's definition: "*motus est exitus de potentia ad actum*"); c) "*motus est actus imperfectus*" (on this occasion Averroes' definitions are dealt with: "*motus componitur ex ente et non ente*" and "*motus est medius inter potentiam et actum qui est perfectio potentie*").

[44] "Sciendum primo quod 'motus' est nomen connotativum et quod propter breviloquium ponitur loco unius dictionis sicut illius vel consimilis "mobile se habet continue aliter quam prius respectu cuiuslibet non moti", et hoc vel secundum qualitatem vel secundum locum et sic de aliis. Et pro eodem supponit concretum et abstractum, scilicet 'motum' et 'motus', et ita connotat res extrinsecas", f. 32ra. A text from Averroes' commentary on the *Physics* is interpreted as a confirmation of the propositional nature of '*motus*': "Et per hoc glosatur dictum Commentatoris quarto Metaphysice dicentis quod motus componitur ex ente et non ente, quia ad hoc quod sit verum quod hoc moveretur requiritur quod quedam negativa sit vera et quedam affirmativa", f. 32rb.

The replies to these *dubia* highlight the importance of penetrating the real meaning of the different definitions, discriminating neatly the ontological and the logical sphere. Thus, we find this distinction in definition a) above, where two different meanings of the word '*actus*' are proposed:

> actus accipitur dupliciter in proposito: uno modo pro aliqua forma informante... alio modo improprie pro aliquo predicabili vel subicibili, quod a natura verificatur in actu et improprie non de facto, id est in presenti, sicut dicimus quod paternitas est actus patris; et isto modo motus est actus.[45]

It is worth noting, finally, how in his replies to the *dubia* Oresme expresses the solution proposed by this third opinion in terms of "*aliter se habere quam prius*", that is in terms of the solution he will put forth as the more probable in Book III, *q.* 7.[46]

5. Opinio IV: "res acquisita mobili dum movetur"

The fourth opinion is discussed more extensively than the others, taking up two whole *quaestiones* in which alteration and augmentation/diminution (III, 4) are dealt with separately from local motion (III, 5).

The opinion in question relies upon Aristotle's *Physics* V, 1, 224b 7-8[47] and, in terms of this particular Aristotelian text, the most suitable denotation of '*motus*' appears to be "*res acquisita mobili dum movetur*". As far as alteration and augmentation/diminution are concerned, this solution is not far removed from the previous one: the body altered or augmented/diminished being the precise equivalent of the *mobile* in local motion. It is, however, exactly local motion that creates problems for this fourth opinion, because in local motion

[45] F. 32ra. The connotative power of '*motus*' plays a very important role in clarifying the various definitions of motion such as "*motus est quantitas*": "Et etiam quod est quantitas, quia connotat mobile sic se habere per tempus longum divisibile, quod dicitur quantitas divisibilis, et sic de similibus", f. 32ra.

[46] See n. 44-45 as far as the first two *dubia* are concerned; for the third: "Imperfectum est illud quod natum est habere aliquid quod nondum habet, et mobile dum movetur est natum esse in loco in quo nondum est ad quod tendit sine quiete media; et secundum hoc, cum sit perfectibile per illum modum se habendi, dicitur imperfectum, quia partem habet vel habuit de illo ad quod movebatur et pars restat habenda. Et quia motus indicat et significat mobile sic se habere, ideo dicitur actus imperfectus, id est predicatum connotans aliquid futurum", f. 32rb. For Ockham himself "*aliter se habere quam prius*" is equivalent to his own solution, see above, n. 8.

[47] As clearly stated in Book III, *q.* 4: "Oppositum patet, quia motus est de genere termini ad quem", f. 32va.

nothing new is acquired as it is in the case of alteration or of augmentation/diminution, given that the space traversed is preexistent in local motion.

5a. Book III, quaestio 4

This opinion no longer favours anymore a *res*-theory solution, as is confirmed by the two first conclusions concerning, respectively, *motus acquisitivus*[48] and *deperditivus*.[49] In the third and last conclusion a process of acquisition or loss (''*non semper est motus, sed solum dum acquiritur*'') is required for motion, whose connotative power is stressed as in the previous opinion.

The objections against this opinion are not numerous,[50] being less than half of those in Book III, *q.* 3. Nevertheless, some of them do deserve attention: in the first — ascribed to Ockham's followers in a

[48] ''Motus est acquisitio ergo est res acquisita; consequentia tenet, quia in aliis est ita, sicut successio diei non est nisi dies. Item, sicut tempus est successio dierum et numerus unitatum non est preter unitates, ita motus non est nisi acquisitio partium que non est preter partes'', f. 32vb. The consensus with authority is pursued also in this first conclusion: ''Probatur primo, quia Commentator dicit quod motus est generatio partis post aliam illius passionis ad quam tendit mobile donec perficiatur et fiat in actu; et subdit necesse est quod motus qui est in substantia inveniatur in genere substantie, et ita de aliis...Item Aristoteles hic dicit expresse quod motus non est preter res et exemplificat de rebus acquisitis, sicut est in augmentatione; ita per simile est in aliis, sed augmentatio est res addita et acquisita, unde dicit 'preexistenti quantitati additamentum', modo 'augmentum' vel 'additamentum' non est nisi res addita per communem usum et non illa cui fit additio'', f. 32vb.

[49] ''Sicut est in diminutione ita est in aliis; modo diminutio non est nisi distinctio seu subtractio quantitatis, modo diminutum non est nisi res que abicitur vel illud quod abicitur ab aliqua re vel res abstracta'', f. 32vb. In these arguments some untenable theological or physical consequences are recorded: as far as the former is concerned, if motion is something different from mobile, a never ending regress is caused by a God's single intervention (such an argument can be found in the first conclusion too); for the latter, when light is corrupted, one is forced to assume that this *res superaddita* is produced by the agent: ''Tertio, in alteratione que est obtenebratio vel umbratio vel lucis subtractio talis motus est deficiens, sicut patet, quia nulla res ibi acquiritur vel inducitur; modo si motus est aliquid aliud superadditum, iam illud induceretur a motore'', f. 32vb.

[50] In these *dubia* the following sentences about motion are explained according to the solution proposed in this fourth opinion: ''motus est actus in potentia secundum quod in potentia'', ''motus est actus imperfectus'', ''motus est actus mobilis'', ''motus est perfectio mobilis'', ''motus est compositus ex affirmatione et negatione'', ''motus est actio motoris'', ''motus est passio in passo'', ''mobile habet perfectionem in actu non secundum quod est motus et passionem secundum quod dicitur in potentia secundum quod est motus'', ''motus est exitus de potentia ad actum'' (from Grosseteste). The fourth opinion's solution is able to warrant also ''*motus est sensibilis*'', see f. 32vb.

marginal note in the manuscript[51] — the opinion in question is confronted with a casus in which a simultaneous acquisition and loss of two different qualities in the same body seems to force one to conclude that two contrary motions are in the body at once, which is untenable. In reply, the simultaneous *intensio* and *remissio* of two different qualities are not considered to be contrary at all, and even space is not regarded as having absolutely fixed *termini*, a remark which covertly, even if not explicitly, might have been raised against Aristotle.[52]

In the second and in the third arguments some semantic problems are dealt with and solved, relying upon the connotative power of various terms. Thus, in the second argument two contrary motions like *illuminatio* and *corruptio luminis*[53] have, in accordance with this fourth opinion, to be judged as "*motus eiusdem speciei*", being both referred to *lumen*. In the third argument, the difficulties raised by the denotation of negative terms like '*deperditio*' are examined by appealing to the connotative import of terms used to qualify the results of these motions.[54]

5b. Book III, quaestio 5

The main problem for the fourth opinion is to account for local motion, because no alteration takes place in the *mobile*. Thus, the first of the three hypotheses proposed in this question suggests an entirely different solution for this kind of motion, accepting, as far as local motion is concerned, the third opinion. In order to overcome the difficulty of the evident difference between alteration, augmentation/diminution, on the one hand, and local motion, on the other, Oresme analyses three different hypotheses. In the first, local motion

[51] "Tunc contra quartam opinionem surgit glosa ochanica", f. 32vb, marg. int.

[52] "Ideo non dicitur aliquid esse sursum vel deorsum nisi in respectu. Et consimiliter, si diceretur quod contraria non sunt simul, tunc idem diceretur calidum et frigidum solum in respectu, non quia haberet duas qualitates, et sic moveretur solum uno motu, qui respectu unius diceretur intensio et respectu alterius diceretur remissio", f. 33ra.

[53] "Solutio: dico quod nomina connotativa dicuntur diversarum specierum et etiam generum propter diversas connotationes et non propter significata pro quibus supponunt", f. 33ra.

[54] "Solutio: vel est solus acquisitivus et denotatur ab illo, vel deperditivus et tunc est deperditum, sed denotatur a nomine illorum que consequuntur illum motum, sicut 'corruptio' vel 'tenebratio', quia secundum hoc dicitur 'terminus ad quem', quia motus est ad hoc ut talis res non sit", f. 32ra.

is considered a special case which can not be included in this fourth opinion, just because nothing new is gained through such motion:

> tunc de questione possunt esse tres ymaginationes speciales. Prima est quod in motibus aliis, ubi aliquid acquiritur vel deperditur, motus est quod acquiritur vel deperditur... Sed in motu locali, per quem nihil fit de novo, motus est mobile, ita quod si motus vel spatium generaretur de novo tunc motus esset spatium, sed quia non est, ideo mobile.[55]

Oresme refutes this solution, because it prevents a unitary definition of motion:

> contra arguitur, quia non videtur si in uno motu motus est illud quod acquiritur quin etiam in alio, maxime quia descriptio generalis motus est univoca.[56]

The importance of Oresme's firm warning against different solutions concerning different kinds of motion is to be emphasized. In all probability, this warning is not simply a general one, because Buridan — admittedly on different grounds — had already proposed dealing with alteration and augmentation/diminution separately from local motion, a proposal which will be, at least partially, accepted by Albert of Saxony.

The second hypothesis, considered by Oresme "*multum rationalis*", because it is particularly suited to the avoidance of the absurdities that follow from the others, identifies the *res* acquired through local motion with the space "*interceptum inter latera continentis*". It is, however, abandoned because it is an unusual imagination, but above all because it is refuted as untenable by Aristotle.[57]

In the third hypothesis, which is deemed more probable and therefore more adequately tested by the *dubia*, the denotations of '*motus*' are the different spaces occupied by the *mobile* during its motion.[58] In this

[55] F. 33rb.
[56] F. 33rb.
[57] "Alia est imaginatio multum rationalis, si esset usitata, quod motus localis est locus non continentis, sed spatium interceptum inter latera continentis; vel saltem quod motus localis non est aliquid, sed esset tale spatium si esset. Et secundum hoc, ponendo tale spatium, non oporteret concedere aliqua absurda que conceduntur secundum alias vias, sed tamen, quia hoc est expresse contra Aristotelem qui improbat illam opinionem, ideo conformiter ad precedentem questionem", f. 33rb.
[58] "Tertia imaginatio est quod motus localis est locus ipsius mobilis dum acquiritur mobili successive, vel plura loca, scilicet medium per quod movetur vel saltem ad quod se habet aliter quam prius circa quod movetur", f. 33rb. It is noteworthy how in this case motion is explained in terms of "*aliter se habere quam prius*".

case the *dubia* concern only physical problems with no hint of Aristotle's, Averroes' or Grosseteste's definitions.[59]

6. Opinio V:[60] *"motus est res successiva distincta simpliciter a permanentibus"*

The fifth and last opinion, in which the denotation of '*motus*' is a *res successiva sive fluxus*, is very important because, as Oresme declares at the end of the following question, if properly interpreted it is the most probable solution to the problem of motion; if, on the contrary, this *fluxus* is regarded as a distinct form it is the worst solution.[61] In order to be able to denote a form inhering to the *mobile*, '*motus*' has to be considered an *incomplexe significabile* (as unequivocally required by the *notabilia* of Book III, *q.* 1, where it is clearly stated as well that it is not the case). Oresme's solution, which anticipates the most probable opinion put forward by him in the following question, is grounded on the identification between *fluxus* and *modus ipsius mobilis*:

> ex predictis potest elici quinta opinio, scilicet quod motus est res successiva distincta simpliciter a permanentibus. Et potest dupliciter intelligi: primo, quod sit una res inherens significabilis incomplexe sicut una forma, et sic non est verum; secundo quod sit conditio vel modus ipsius mobilis, et sic est verum.[62]

In order to win for the *fluxus* a non "realistic" perspective, Oresme proceeds by distinguishing three different meanings of '*successivum*'

[59] Most solutions rely upon a deep analysis of the meaning of various terms. Some passages concern the meaning of '*velox*' ("'velox' consignificat motum acquiri in pauco tempore", f. 33rb) and the criterion according to which two different velocities are compared ("equalitas velocitatis non attenditur penes totum acquisitum, sed penes lineam qua mensuratur distantia, sicut conformiter in motu alterationis", f. 33va).

[60] In the *con*-argument Averroes' distinction between *fluxus formae* and *forma fluens* is considered as one of the sources of this opinion: "Oppositum patet, quia motus est in genere passionis et Commentator distinguit quod capitur pro fluxu forme aut pro forma fluente, ut patet commento quinto", f. 34vb.

[61] "Alia que ponit quod est fluxus ad modum unius forme distincte, sicut esset albedo vel anima vel aliquod tale, est omnium pessima; tamen si intelligatur quod non sit talis forma vel talis res, sed modus vel conditio ipsius mobilis, tunc esset verissima et probabilior et facilior inter omnes et concordat dictis Aristotelis et philosophorum", f. 34vb. Even though no explicit reference is made to Buridan, I think that in this fifth opinion Oresme has in mind exactly his position; the mention of *albedo* (quoted explicitely by Buridan in the text of n. 3) is too generic to be considered an allusion to Buridan's commentary on *Physics*.

[62] F. 34ra. The twofold meaning involves in some way the opposition between res inherens/incomplexe significabile and modus rei/complexe significabile. The interpretation of *fluxus* as a *conditio vel modus ipsius mobilis* prevents one from considering it as a *res distincta simpliciter a permanentibus*, see also n. 71.

inside an extended ontology — which includes, in addition to substances and accidents, the *modi rerum* — beings, qualities and *modi rerum* which are successive in the strictest acceptance of the term.

In the first acceptance of '*successivum*', where the *mobile* is labelled as *successivum improprie*, we probably find the first hint at a different solution from that of the third opinion:

> successivum dicitur tripliciter: primo, improprie pro re permanente que successive secundum equale esse, sicut mobile dum movetur, dicitur successivum, quia succedit per diversa loca...Alio modo minus improprie pro re cuius pars est in facto et pars alia est acquirenda vel in acquiri sicut caliditas dum acquiritur dicitur successiva...Et tertio pro eo quod in nullo tempore sic se habet quod illud quod fuit in prima parte est in secunda parte, sed quolibet tempore accepto in una parte illius est aliquid tale illius successivi et in alia totaliter aliud, et sic est ymaginandum de tempore, quia prima pars non est quando secunda est, ideo tale dicitur non permanens sed in continuo fluxu et transitu.[63]

In the third *distinctio*, the *modi rerum* make, if not their first, certainly their official, appearance in addition to substances and accidents; it is a very important statement, because in the next question Oresme proposes them as the proper denotation of '*motus*':

> alique forme sunt per se existentes, alie sunt forme accidentales... alie sunt que dicuntur conditiones vel modi rerum vel taliter se habere sicut quedam relationes et huiusmodi.[64]

Oresme's main effort in the following conclusions is precisely directed to locating successive (in the strictest sense[65]) beings, qualities and *modi rerum* in this kind of ontology: the first to be considered is the weakest form of ontology, that is the *modi rerum*, which include motion

[63] F. 33vb. In the second *distinctio* a further distinction refers to the difference between a *secundum quid* and an absolute meaning, which is identical with the second and third acceptances of the previous threefold distinction: "Adhuc successivum dicitur dupliciter: uno modo secundum quid et categorematice, quando non permanet secundum totum, tamen aliquod eius semper est permanens sicut illud cui fit continua additio in quolibet instanti est aliud et aliud secundum totum. Alio modo dicitur successivum simpliciter et sincategorematice quod nec secundum se nec secundum aliquid sui permanet per aliquod tempus, sicut ymaginaretur de motu et tempore", ff. 33vb-34ra.

[64] F. 33vb. See also n. 31 as far as relations are concerned.

[65] The *successivum secundum quid* raises no problem: "rationabile est esse aliquod successivum secundum quid seu sit conditio rei vel sit verus motus. Unde possibile est quod in quolibet instanti in aliquo tempore sit nova figura secundum totum. Similiter si sit accidens sicut caliditas, quando intenditur; unde in quolibet instanti est aliqua que nondum fuit, licet pars eius prefuerit. Similiter etiam in substantia, sicut in inanimatis, quando ignis comburit aliquod successive, tunc in quolibet instanti est aliquis ignis qui non fuit ante nec aliquid permanet secundum se totum", f. 34ra.

and time.[66] *Illuminatio* and *sonus* are the examples as far as qualities are concerned (accidental forms). It is not so easy, nevertheless, to single out a *res pure successiva* in the category of substance; in the example Oresme proposes he is forced to resort to a very special casus in which God is imagined to create a being, presumably a man, at each instant of a continuously changing proportion.[67] This created being as a whole (*aggregatum ex omnibus istis*) should be looked at as a successive (in the strictest meaning) substance, but it is difficult to see how this aggregation could be considered a single man, as the text seems to suggest.[68] In the following corollary, Oresme tries to soften such a difficulty by claiming for continuous beings a mereology completely different from that of permanent beings, quite similar to that regulating the relationship between a divisible whole and its indivisible parts, like a line and its points or a time interval and its instants.[69]

In the ensuing discussion (where the *dubia* are not used to confront

[66] "Secunda conclusio est de successivo simpliciter, quod est aliqua conditio simpliciter successiva. Probatur primo de motu, et est manifestum in motu locali quod mobile continue est in alio et alio loco et quod continue se habet aliter et aliter a se", f. 34ra. The continuous changing of a proportion seems to be a purely continuous being of this kind: "Secundo, sit a quantitas maior et b minor et diminuatur a successive; tunc in quolibet instanti a ad b habet aliam et aliam proportionem ergo talis proportio que est per totum tempus dicitur successiva et quidam modus se habendi successivus et in nulla parte temporis habet taliter esse qualiter se habet in sequenti, ergo est simpliciter successivum iuxta expositionem prius positam", f. 34ra. A similar example, with particular reference to the denotations of terms according to which the comparison is drawn, is to be found in the fourth conclusion, see the following footnote. It is in any case noteworthy to stress how the set of the changes in the proportion between two elements is — like motion — a *res pure successiva*, different from the elements compared and presumably not inhering to them.

[67] "Quarta conclusio: quod non implicat contradictionem nec est simpliciter impossibile quod sit aliqua substantia simpliciter successiva. Verbi gratia: si a quod est duplum ad b diminuatur successive, non est contradictio quod Deus creet unum subiectum vel hominem qui precise duravit quamdiu a erit duplum, scilicet per solum instans, et similiter quando erit sesquialterum, et sic de qualibet alia proportione; igitur tale aggregatum ex omnibus istis esset homo vel substantia successiva cuius nihil quod erat in aliqua parte temporis fuit in sequenti", f. 34ra.

[68] A very similar example is mentioned in Albert's of Saxony commentary on the *Physics*, Book III, *q.* 3: "non implicat contradictionem quod substantia aliqua sit simpliciter successiva, hoc est de termino substantiali significative accepto verificetur ly ens simpliciter successivum. Patet, quia non implicat contradictionem, immo forte ita est quod Sor continue fit vel producitur a prima causa recte sicut lumen vel species coloris vel visibilis continue est alia et alia imago seu species, sic continue Sor est alius et alius homo", Albertus de Saxonia, *Questiones*, f. 35ra.

[69] "Et dico correlarie quod in talibus illud quod est solum per instans non est pars illius successivi, sed se habet ad illam sicut punctus ad lineam et instans ad tempus", f. 34ra.

the position in question with authoritative definitions as in the previous questions), *res* and *modus rei* are carefully discriminated. In the first *dubium* Oresme maintains the equivalence between *fluxus* and "*aliter se habere quam prius*", here called *modus rei*, to the extent that this opinion — the truest if properly interpreted — is very similar to Oresme's own solution in the following question.[70] The hypothesis according to which the *fluxus* is a *res distincta* from the *mobile*, upheld in the second, fourth and sixth objections, has untenable physical (ob. 2 and 6 with a never-ending regress[71]) or theological (because God could not create anything without such a *fluxus*, ob. 4[72]) consequences.

The equivalence between *fluxus*, "*aliter se habere quam prius*", and *modus seu conditio rei* anticipates Oresme's own solution in the following question.

7. Oresme's own solution: "motus est aliter se habere quam prius"

In addition to the various definitions of '*motus*' examined in the different opinions, from the beginning of this discussion Oresme has constantly resorted to the description "*aliter se habere quam prius*". Oresme's proposal of a new definition of '*motus*' aims to mediate between the different opinions previously discussed and is therefore more general, so much so that the others, as we have seen, could be formulated in terms of "*aliter se habere quam prius*".

This opinion, like the previous ones, is obviously not favourable to a *res*-theory, and for this reason it is essential to gain a precise deter-

[70] That is clearly stated in the reply to a *con*-argument according to which *fluxus* is not able to explain motion: "Sed videtur quod non, quia sufficit quod illa se habeant aliter quam prius. Sed hoc est concedere propositum, quia postquam oportet quod ita sit in re quod aliter se habeat quam prius, illud 'aliter se habere' vocatur 'modus rei'", f. 34rb.

[71] "Secundo, talis res exit in esse sine additione superaddita sibi, quia tunc esset processus in infinitum... Solutio: negatur consequentia, quia motus non ponitur talis res, sed solummodo modus quo aliquid se habet dum acquiritur aliquod esse", f. 34rb.

[72] "Quarto, Deus non posset annichilare unam rem successive quin crearet aliam, scilicet illum fluxum, et sic posset argui de creatione, quod non posset creare unam quin crearet duas", f. 34rb. If properly understood as a *res pure successiva* and *aliter se habere quam prius*, *fluxus* can not be separated by motion, neither by God's absolute power: "tertio, sint tres: aqua, ille fluxus et caliditas in alteratione; tunc si Deus poneret caliditatem in aqua circumscribendo illum fluxum, tunc alteraretur sicut nunc, ergo frustra ponitur talis fluxus. Responditur negando casum, quia, sicut Deus non potest facere quod aqua calefaceret successive quin haberet se aliter et aliter, ita nec potest tollere illum modum se habendi in casu posito", f. 34rb.

mination of the meaning of "*aliter se habere quam prius*". It is a delicate point in the discussion, because Buridan had grounded his betrayal of the "nominalist" cause as far as local motion is concerned just because he needed to suppose a "reference mark" inside the *mobile* in order to solve the casus of a rectilinear motion of the universe as a whole; this internal reference mark, called sometimes disposition, is, according to Buridan, different from the *mobile* and inhering to it.

Oresme presents five different solutions concerning the proper meaning of "*aliter se habere quam prius*" and discusses the different problems raised by them. Firstly, a generic formulation prevents one from differentiating beings in motion from beings at rest, since the latter change their position with respect to the beings in motion. The second solution, according to which the reference mark is fixed in one or more beings at rest ("*continue se habere aliter ad aliquid quiescens*"), is refuted by Oresme on two different grounds: a formal (because of a *petitio principii*, rest being explained in terms of motion[73]) and a physical one, supposing that the whole set of beings is moved.

As far as the physical objection is concerned, it is very similar to the one put forward by Buridan who holds the *mobile*-theory untenable as far as local motion is concerned, preferring instead a *res superaddita* inhering in the *mobile*. Notwithstanding the complete overlapping of Buridan's and Oresme's solutions to this problem (both are for an internal reference mark) and to the more general problem of motion (for both the denotation of '*motus*' is a *res pure successiva*), Oresme explicitly criticizes the inherence of this *res successiva* to the *mobile*. There is in Oresme's text no overt criticism of Buridan, but in Book III, *q.* 6 he deems the *fluxus*-theory to be the worst theory when the *fluxus* is interpreted as a *res superaddita* inhering in the *mobile*. Another element in Oresme's position permits one to grasp the difference between this position and Buridan's: Oresme is convinced that the *fluxus*, properly interpreted as a *modus seu conditio ipsius mobilis*, could in no way be separated from *mobile*, not even by God's absolute power.[74]

This difference between Buridan and Oresme lies in the different features assumed by *fluxus* in their respective texts: even though they

[73] "Primo, quia tunc esset petitio principii, quia queram quid est quiescere; et cum sit privari motu, non potest describi nisi per moveri", f. 33rb.

[74] See n. 72. The same remark is to be found in the appraisal of the third opinion in Oresme's final review of the different solutions in Book III, *q.* 7, see below, n. 92.

agree about its successiveness (*res successiva*), for Buridan it is something very nearly an accident (or anyway near to an accidental form), while for Oresme it is a *modus seu conditio* of one and the same *mobile*. Oresme moreover does not hint at either the Parisian condemnation of 1277 or God's absolute power.[75]

The fourth solution[76] takes up the issue of the imagined space discussed in Book III *q.* 5 (where it is considered as a very rational hypothesis[77]), and refutes it as untenable because it is contrary to Aristotle and in any event not general enough to be utilized for all kinds of motion.[78]

The "*melior et vera*" solution, the fifth, leaves out of consideration the external reference marks and thus the "*aliter se habere quam prius*" refers exactly to a reference mark within the *mobile*:

> quinta descriptio melior et vera est quod moveri est aliter se habere continue quam ipsum mobile prius se habebat respectu sui et non respectu cuiuscumque extrinseci.[79]

The importance of this move clearly emerges from the *suppositiones* following the conclusion in which Oresme refuses to consider '*motus*' a *res permanens*:[80]

[75] Oresme relies upon Aristotle's *Meteorologica* and Averroes' commentary to *De caelo* for the possibility, respectively, of the motion of the heavens (together with the elements, earth excluded) and the motion of the earth. The latter is attributed to the uninterrupted interaction between contrary qualities, which is responsible of the continual change of the centre of gravity as to the centre of the earth. In the third argument the simultaneous change of all changeable beings is imagined, see f. 34va. The resort to *casus divini* is limited to the last argument, where God is entitled to move something, even if it is the only existent being in the world, lacking thus any external reference mark: "Quarto sic: si sit tantum unum corpus Deus posset illum movere et nullum esset quiescens", f. 34va.

[76] The third solution is an extended form of the second: "Tertia descriptio est quod moveri est aliter se habere ad aliquod quiescens si est vel si esset", f. 34va, for which the previous objections are valid.

[77] See n. 57 above.

[78] "Quarta descriptio est quod est aliter se habere ad aliquod spacium ymaginatum, quod esset vacuum si non esset ibi corpus. Ista non valet: primo, quia per Aristotelem non est ponendum tale spatium ymaginatum quia nihil est. Etiam illa descriptio non esset nisi de motu locali, quia illud quod alteratur non se habet aliter ad tale spatium, et ita non est generalis", f. 34va.

[79] F. 34va. In the two following *probationes*, Oresme imagines the motion (local and qualitative change as well) of only one being, as in the only previous argument where God's absolute power is quoted, see above, 75.

[80] "Pono conclusionem quod motus est quedam mutatio preter res permanentes que est successiva, exponendo 'successivum' sicut prius", f. 34va.

suppono aliqua: primum est quod nulla duo possunt invicem se habere aliter quam prius nisi alterum sit mutatum aliquo modo. Secundum est quod aliquid potest aliter se habere ad aliud sine eo quod ipsum est mutatum, sicut aliquid sit simile vel dextrum solum per mutationem alterius, et tunc est in eo quedam conditio relativa que non fuit ante. Tertium est quod nihil se habet aliter quam prius respectu sui ipsius nisi sit mutatum. Quartum est quod esse sic mutatum respectu sui ipsius habet aliquam conditionem quam prius non habebat.[81]

The *mobile*'s continuous internal changes, which for Oresme are the different *modi* or *conditiones*, are the *res successiva* required for explaining the meaning of '*motus*'[82].

Oresme proposes the explicit equivalence between motion and *modi* or *conditiones* of the *mobile* in the final remarks of the *casus* of a single body moving and being at rest alternately for an hour; it is not possible in this case to point an external reference mark in order to establish the different position of the body:

ergo in se ipso habet aliquam conditionem que non erat ante, et hoc vocatur 'movetur'.[83]

In the third argument in favour of the equivalence between motion and *modus* or *conditio* of the *mobile*, Oresme maintains that only this kind of solution may certify the motion of the heavens and the condition of rest of the earth, given that their reciprocal position is also explicable through the earth's diurnal motion.[84] Even the presence of the mover's force is not enough for Oresme to establish which of two bodies is moving,[85] because in a complex system of moving bodies —

[81] F. 34va.

[82] An example in the reply to the first objection is very important to the understanding of Oresme's position: "Quia solum est illud quod mobile habet esse uno modo, id est habet unum modum se habendi, et alias habet alium modum, et secundum hoc dicitur alterum a se improprie, sicut dicimus quod Sor sedens est alter a se ipso stante, vel differt a se ipso stante", f. 34va.

[83] F. 34va. We find the same thing in the reply to an objection: "Secundo, arguitur sic: sint duo corpora a et b et a moveatur circulariter et b quiescat in prima hora, et in secunda e converso: tunc a non se habebit aliter ad b in una hora quam in alia, sed omnino eodem modo, in tantum quod nullo sensu posset percipi quid eorum movetur, igitur pari ratione qua unum movebitur et alterum, nisi in uno ponatur aliqua conditio que non erit in alio, et hoc vocatur 'motus'", f. 34va-b.

[84] "Tertio, non esset aliqua ratio quare terra non moveatur motu diurno et celum movetur quam e converso; consequentia patet, quia omnis habitudo unius ad alterum et aspectus qui fit ex motu celi fieret ex motu terre, ideo, sicut dicebatur prius quod motus non est sensibilis, ideo non posset experiri utrum terra moveatur circulariter aut celum", f. 34vb.

[85] "Sed diceretur ad ista quod quando sunt duo et unum movetur et alterum quiescit, quod illud movetur cui movens applicatur et virtus sua, et sic non oportet ponere aliquam conditionem", f. 34vb.

like that proposed by Oresme of a man on a ship, running in the opposite direction to the ship's motion — the *virtus motiva* could not represent an effective criterion.[86]

It is only a hint, but it is nevertheless noteworthy, because as Maier has already pointed out,[87] even though it is not appropriate to interpret this position (rather than *impetus*-theory) as a precursor of the modern law of inertia, the motion regarded as a *modus rei* could in fact have fostered a more kinematic analysis of motion.

We have already seen how Oresme's proposal is largely indebted to the *fluxus*-theory of the fifth opinion, which a new interpretation brings into the "nominalistic" field; the other opinions as well, however, could have contributed to the establishment of his own solution. He does not in any case excuse himself from reviewing them at the end of this question, in which he puts forth his own solution. In order to establish through his appraisal of these opinions a possible conceptual route to his own solution, it is worth mentioning these last remarks.

Relative to the first opinion, the denial of motion is grounded upon the limitation of one's ontology to merely *res permanentes*.[88] The second opinion, even if regarded unenthusiastically ("*licet parum valeat*"[89]), is according to Oresme meritorious for claiming more than a single element in explaining motion; the epistemological analysis in Book III, *q.* 1,[90] in which motions turns out to be a *complexe significabile*, confirms the solution of this second opinion and the importance of such a move for the polemic against a *res*-theory. The fourth opinion too deserves attention, even if only as far as alteration and augmentation/diminution are concerned; Oresme openly criticizes its refusal to consider the *mobile* as the denotation of '*motus*' in local motion.[91]

In order to better comprehend Oresme's own solution, by far the most important opinions are, nevertheless, the third and the fifth. The

[86] "Hoc non valet, quia non sequitur: movens applicat virtutem suam ita fortiter ut moveretur et mobile non plus resistit ergo movetur, quia si hoc sit in navi mota et sit versus unam partem et currat ad alteram eque velociter, tunc alique eius partes quiescunt et tamen virtus motiva est in operatione sua sicut si moveretur", f. 34vb.
[87] A. Maier, *Zwischen*, 131-3.
[88] "Prima etiam dicit quod motus nihil est; capiendo 'aliquid' pro eo quod vere est aliquid, concedenda est, sicut dicit Aristoteles quod accidens non est ens sed est entis, etiam quia non est permanens sed successivum, et de istis dicitur 'esse' equivoce", f. 34vb.
[89] F. 34vb.
[90] See above, n.8.
[91] "Quarta, ponens quod est acquisitum, etiam est vera, quia uno modo capitur pro acquisito, sed falsa est in eo quod negat aliam acceptionem", f. 34vb.

former is never overtly opposed by Oresme, who disagrees only with its identification of "*aliter se habere quam prius*" with *mobile*; in any event, praise exceeds criticism and Oresme seems to think that this third opinion is the most determined (or the most powerful) in the struggle against a *res*-theory.[92] The fifth, properly understood is, as we have already seen, the best and the truest one.[93]

The only difference between the third opinion and Oresme's concerns not, properly speaking, the denotation of '*motus*', but rather that of "*aliter se habere quam prius*", which he fixes in the *modus rei*, a *res pure successiva* as required by the nature of motion, and not in the *mobile*, a permanent thing, as in the third opinion (and in Ockham). The Oresmian *fluxus* is not, nevertheless, identical to Buridan's *dispositio*, a sort of accident inhering in the *mobile*. The term '*motus*' is for Oresme a *complexe significabile*, it is not a simple term, but a disguised *oratio* and as such it cannot simply denote a substantial or accidental form.

As we have seen, the existence of *modus rei*, which for Oresme is equivalent to a *fluxus* and to "*aliter se habere quam prius*", is explicitly claimed in a specific conclusion of Book III, *q.* 7; we have, moreover, seen how it is difficult to single out a successive (in the strictest acception) being in the category of substance. In the *dubia* presented by Oresme in the fifth opinion, the identification of a *fluxus* with a *res distincta* from the *mobile* is eagerly refuted. It seems, therefore, that the widening of ontology through the *modi rerum* notwithstanding, the *modus rei* is to be carefully distinguished from beings such as those included in the category of substance. The reply to the *con*-argument of this Book III, *q.* 7 hints at the different ontology of the *modus rei*: the condition (*conditio*) expressed by such a *modus* is not a "*conditio realis*" but a "*passio*" of the being.[94]

[92] "Tertia, que dicit quod est mobile, quia ymaginatur quod aliter se habere non sit nisi res sic se habens, secundum hoc habet apparentiam, quia etiam ista conditio vel fluxus non est tale superadditum, sicut multi ymaginantur, nec est res separabilis quacumque virtute sicut est albedo", f. 34vb.

[93] See above, n. 61.

[94] "Dico quod si illa conditio sit relativa respectu extrinseci non sequitur quod propter hoc sit mutatum, sed sufficit aliquando esse mutatum; si tamen sit respectu suimet, tunc est mutatum, ut dictum est; nec dicitur talis conditio realis, ymmo passio etc.", f. 35ra. The identification between *conditio* (which is the same as '*movetur*') and *passio* could induce one to suppose that for Oresme *motus* is to be located in the category of *pati*, I think, however, that Oresme's position is very distant from the "*modus famosior*" quoted by Averroes, which is substantially favourable to a *res*-theory, see A. Maier, *Zwischen*, 62-8. In the text quoted in n. 80 Oresme states that motion is a "*mutatio preter res permanentes*".

A notable remark by Albert of Saxony in his commentary to the *Physics* III, 3, constitutes a working aid to the understanding of Oresme's position (and this remark concerns a solution to the problem of motion which actually is not far from the one put forward by Oresme):

> et ita ponentes motum non esse aliud a rebus permanentibus sed esse ipsas res permanentes taliter et taliter se habere ad invicem non concedunt: "motus est ens", quamvis bene concederent de numero eorum que sunt, sed non de numero entium.[95]

If we take seriously Albert's indication — and there is nothing in Oresme's discussion to oppose it — there are two different kinds of things to be considered as far as motion is regarded: a *res pure successiva* to be identified in the different positions (or dispositions) of *mobile* — positions (or dispositions) that exist as such, but are not *entia* —, and the *mobile* itself, a real *ens*.[96] Oresme tries on his part to grant the existence of *res pure successive*, as we have previously seen, but I do not think that his solution is far from that described by Albert. If I am right, we can conclude this paragraph by pointing out how Oresme's position is substantially inspired by Ockham's criticism of a *res*-theory, taking however into account Buridan's suggestion of considering '*motus*' a *res pure successiva*[97] or a *fluxus*, but disregarding his final *res*-theory.

[95] "Notandum tamen quod notanter formo questionem sub hac forma: 'utrum de numero eorum que sunt alia sint permanentia etc.', non sub hac: 'utrum de numero entium quedam sint permanentia etc.', quia non de omni termino significative accepto de quo est verificabile 'esse' est verificabile 'ens'. Statim patet hoc: de nomine 'exercitus' significative accepto bene verificatur 'esse' sed non 'ens', quia quamvis hec sit vera: 'exercitus est', hec est falsa: 'exercitus est ens'", Albertus de Saxonia, *Questiones*, f. 34vb.

[96] A distinction between *ens* and *aliqualiter ens* perhaps not far removed from Albert of Saxony's is to be found in Richard Billingham's *quaestio*: "Utrum idem ⟨sit⟩ Sor et Sortem esse": "Tunc ad argumentum illud, nego illud, scilicet 'Sortem esse est igitur est aliquid', sed bene sequitur quod sit aliqualiter. Et potest concedi ulterius quod Sortem esse est ens, non tamen aliquod ens, sed aliqualiter ens", see M. J. Fitzgerald, *Richard Brinkley's Theory of Sentential Reference. "De Significato Propositionis"* from Part V of his *Summa Nova de Logica*, Leiden 1987, 135 (Studien und Texte zur Geistesgeschichte des Mittelalters, 18; I give a different punctuation, see G. Nuchelman's review of the volume in: Vivarium, 26 (1988), 153-5).

[97] A distinctive feature often required in the medieval debate on motion, see A. Maier, *Zwischen*, 89, 92, 97, 112.

8. Final remarks

Ockham regards the description of '*motus*' as "*aliter se habere quam prius*" identical with his own;[98] Buridan uses this description in order to state that '*motus*' is a *fluxus* and a *res pure successiva*. Oresme on his part is wholly original, as far as I know, in stressing the identity of this *fluxus* with the *modus seu conditio ipsius mobilis*, which allows him to avoid a *res*-theory like Buridan's and to maintain a unitary theory of motion. This effort seems, however, not to have had a large following: Albert of Saxony, even though mentioning *fluxus*, "*aliter se habere quam prius*" and so on, in his discussion of motion prefers to distinguish neatly between philosophical research (adhering on these grounds to the *mobile*-theory), and *casus divini* (accepting in this case Buridan's *res*-theory as far as local motion is concerned).

I have reported in some of the footnotes some possible sources of Oresme's doctrine of *modus se habendi*; they are however neither the only ones nor perhaps the most probable. Another possible source can be found in the discussion on the meaning of the proposition.[99] Oresme seems in fact to depart both from William Ockham and John Buridan on the meaning of "*aliter se habere quam prius*", which is the description of '*motus*' he proposes as the most probable one.[100] The ground for this departure is probably to be found exactly in Oresme's choice of a *modus rei*-theory as far as the meaning of the proposition is concerned. We have moreover seen how the difference between an *incomplexe* and a *complexe significabile* was stressed by him over and over, above all in order to avoid a *res*-theory like Buridan's. From a strictly referential point of view, the distinction quoted by Albert of Saxony permits one to gather how Oresme's (and in a different way Albert's of Saxony and Marsilius' of Inghen after him) position is more congenial to Ockham than to Buridan.

Richard Billingham is the supporter of a *modus rei*-theory as far as the meaning of the proposition is concerned;[101] it is difficult, however,

[98] See above, n. 8.

[99] G. Nuchelmans, *Theories of the Proposition*, 274-6.

[100] On the difference between Ockham and Buridan see M. McCord Adams, *William Ockham*, I, 305-10.

[101] J. M. Fitzgerald, *Richard Brinkley's Theory*, 3-4, 125-50 (App. I and II). The *modus rei*-theory is the first opinion recorded by Paul of Venice in the chapter *De significato propositionis* in his *Logica Magna* see Pauli Veneti *Logica Magna*. Secunda Pars. *Tractatus de veritate et falsitate propositionis et Tractatus de significato propositionis*, ed. F. Del Punta and M. McCord Adams, Oxford 1978, 80-5.

to determine precisely if Oresme's direct source is Billingham.[102] I thus limit myself to pointing out a very interesting passage from the *Questiones super Artem Veterem* of Albert of Saxony, where he equates *complexe significabile* and *modus rei*:

> Tertia conclusio: syncathegoremata non significant aliquam rem quae sit substantia vel accidens, sed bene significant modum rei, quod ab aliis vocatur significabile complexe. Patet hoc, nam praedicatum verificari de quolibet contento sub subiecto, vel removeri a quolibet contento sub subiecto, non est aliqua res quae sit substantia vel accidens, sed bene est modus rei et dispositio, puta subiecti vel praedicati; et sic syncathegoremata bene significant aliquid, prout ly aliquid non solum significat existentiam rei sed etiam modum rei.[103]

In the identification of *complexe significabile* with *modus rei*, the complete demarche of Oresme's discussion on motion can be summarized: beginning from Book III *q.* 1, where Oresme says that '*motus*' is a *complexe significabile*, until Book III, *q.* 7, in which the "*aliter se habere quam prius*" — that is, what results from human beings' perception of motion — is identified with the *fluxus/res pure successiva* and then with the *modus seu conditio ipsius mobilis*.

The final remark about the meaning of "*aliquid*" seems, moreover, to confirm Albert's subtle distinction between "*ens*" and "*esse de numero eorum que sunt*" in the passage quoted above[104] from his commentary on the *Physics*, or, at least, the different ontology of *modi rerum* in comparison with substances and accidents in Oresme's discussion (a difference which prevents the recourse to a *res*-theory for motion).

G. Nuchelmans' remark concerning Abelard's position on the meaning of the proposition could *mutatis mutandis* well summarize the

[102] Contrary to B. Hansen's conviction that Oresme is perhaps critical against "the logicians' approach to natural phenomena", B. Hansen, *Nicole Oresme and the Marvels of Nature. A Study of his "De causis mirabilium" with Critical Edition, Translation, and Commentary*, Toronto 1985 , 227 (Studies and Texts, 68), I think that he is effectively using this kind of approach here as well as in other writings, see S. Caroti, *"Peryodus" e limiti di durata nelle "Questiones super de generatione et corruptione" di Nicole Oresme*, in: P. Souffrin and A. Ph. Segonds (eds.), *Nicolas Oresme. Tradition et innovation chez un intellectuel du XIVe siècle*, Padova-Parigi 1988, 209-36; id., *Nuovi linguaggi e filosofia della natura: i limiti delle potenze attive in alcuni commenti parigini ad Aristotele*, in: S. Caroti (ed.), *Studies in Medieval Natural Philosophy*, Firenze 1989, 177-226 (Biblioteca di Nuncius. Studi e testi, 1). On this topic see J. E. Murdoch, *The Involvement of Logic in Late Medieval Natural Philosophy*, in: *Studies in Medieval Natural Philosophy*, 3-28.

[103] Albertus de Saxonia, *Quaestiones in Artem Veterem*, ed. A. Muñoz Garcia, Maracaibo 1988, 500, 767 (*Quaestiones super librum Aristotelis De interpretatione*). See also G. Nuchelmans, *Theories of the Proposition*, 241-2 and H. A. G. Braakhuis, *De 13de Eeuwse Tractaten over Syncategorematische Termen*, vol. 1, Ph.D. Leiden 1979, 488-90, n. 63.

[104] See above, note 95.

difference between Buridan and Oresme on motion, and particularly on local motion:

> The difference between the *res* theory which Abelard mentions and his own position may be summarized by saying that for the reists the significate of a *propositio* is a *res sic se habens*, a thing in a certain state, while for Abelard it is a *quidam rerum modus habendi se*, a certain state of things.[105]

I cannot claim that the apparent originality of Oresme's position on motion may depend, at least partially, on our inadequate acquaintance with the medieval debate on this topic: many texts are either not accessible in modern editions or not yet sufficiently explored. The importance of Oresme in the Parisian tradition from Buridan to Marsilius of Inghen — which was a constant model for the late scholastic thought all over Europe — requires nevertheless a deeper analysis of his commentary on the *Physics* and above all of the *quaestiones* where motion is discussed. In the Parisian debate, Oresme's authoritative voice fosters new perspectives which are not a mere repetition of received convictions.

Apart from the originality of Oresme's solution, I think that the importance of two elements of his discussion have to be stressed: the explicit recourse to *perspectiva* and the probable appeal to philosophical and semantic theories like those concerning relations and the meaning of the proposition. These two elements deserve attention by themselves, but they also urge us to a larger and deeper consideration of the complexity of medieval natural philosophy, a field much more interesting and complicated than what can result from an analysis only concerned with the search of precursors rather than with deepening our understanding of the historical context from where those theories originated.[106]

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[105] G. Nuchelmans, *Theories of the Proposition*, 219.

[106] The broadening of the perspectives on medieval natural philosophy in recent historiography is to be ascribed to John E. Murdoch, see S. Caroti, *Nuove prospettive della storiografia di storia della scienza medievale: le proposte di John E. Murdoch*, in: Nuncius, (1992), 231-52. See also the introductory remarks of D. C. Lindberg, *The Beginnings*, 1-4.